The Gender Gap in Heart Disease: Lessons From Eastern Europe

Why are men more susceptible to heart disease than women? Traditional risk factors cannot explain the gender gap in coronary heart disease (CHD) or the rapid increase in CHD mortality among middle-aged men in many of the newly independent states of Eastern Europe.

However, Eastern European men score higher on stress-related psychosocial factors than men living in the West. Comparisons between the sexes also reveal differences in psychosocial and behavioral coronary risk factors favoring women, indicating that women's coping with stressful events may be more cardioprotective.

Men's greater susceptibility to heart disease, particularly observable in many Eastern European countries, poses unique threats to public health and points to solutions in the behavioral and social arena. (*Am J Public Health.* 2003;93: 768–770)

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DECLINING LIFE EXPECTANCY IN EASTERN EUROPE

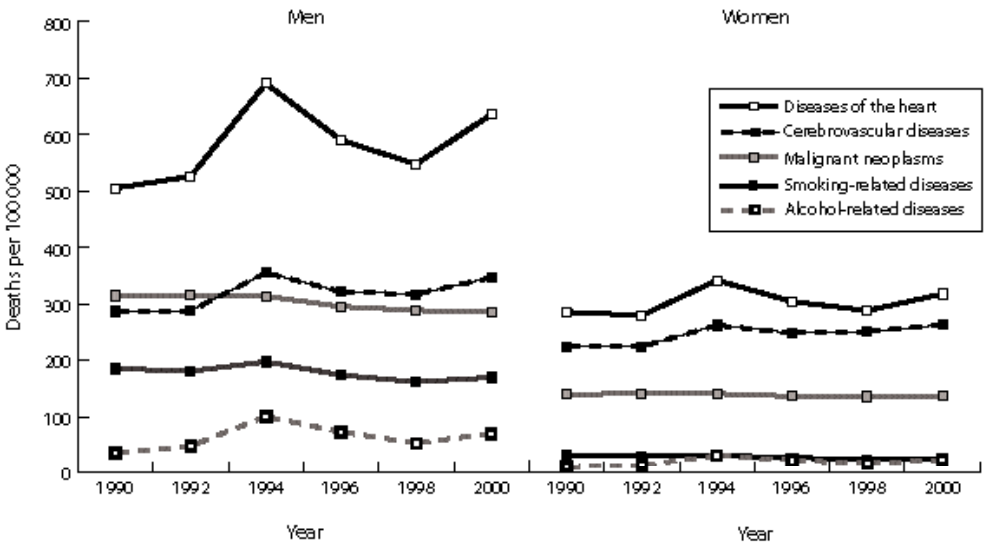
DURING THE LAST DECADE, life expectancy has been continuously increasing in the United States and many Western European countries. By contrast, life expectancy in many of the newly independent states of Eastern Europe has declined during the same time period. For example, Notzon et al.,[1] who examined mortality data for women and men for the years 1990 to 1994, noted that life expectancy for Russian men decreased from 63.8 to 57.7 years; for women, life expectancy decreased from 74.4 to 71.2 years, resulting in the widest gender gap in mortality (13.5 years) anywhere in the industrialized world.

A more recent World Health Organization report on healthy life expectancy (a measure of life expectancy adjusted for disability) confirms that "Russia has one of the widest sex gaps in healthy life expectancy in the world: 66.4 years for women at birth, but only just 56.1 years for men."[2(p1688)] Furthermore, the outlook for the future in Eastern Europe remains bleak, especially for men: on the basis of data from the Global Burden of Disease Report, no change—or a further decrease—in life expectancy at birth among men of the "former socialistic economies" of Europe is expected for 2020. In contrast, women's life expectancy is projected to remain unchanged or to increase in the same countries between 1990 and 2020.[3]

The most striking feature of the health crisis in many Eastern European countries is that it has not affected those groups considered especially vulnerable, such as children and the elderly, but instead those of working age, particularly middle-aged single men.[4] Furthermore, the transition period has not affected all countries in the same manner. Increasing income inequality appears to be associated with some of the differences in health decline between countries: on the basis of data from Russia, Ukraine, Bulgaria, the Czech and Slovak Republics, Hungary, Romania, and Poland between 1988 and 1996, it was Russia and Ukraine that had the largest increase in income inequality; Poland, the Czech Republic, and Hungary showed the most modest increase. Interestingly, the decline in health has been most pronounced in Russia and Ukraine and least in Poland, the Czech Republic, and Hungary.[5,6]

HEART DISEASE AND LIFE EXPECTANCY

The number one cause of the health decline in Eastern Europe appears to be a dramatic in-



Source. Adapted from a report by the National Center of Health Statistics.[8]

FIGURE 1—Age-Adjusted Russian Mortality Rates for Selected Causes of Death, by Sex: 1990–2000.

crease in heart disease (primarily coronary heart disease [CHD]), which has assumed epidemic proportions.[7] This epidemic is illustrated in Figure 1, which shows age-adjusted Russian mortality rates for selected causes of death for the years 1990–2000. As can be seen, the increase in deaths owing to diseases of the heart has been especially pronounced among men. Conclusions from several reports on determinants of this cardiovascular disease epidemic in Eastern Europe have been disheartening. Because this epidemic is greatest among middle-aged men, it is unlikely that level of health care provision or environmental hazards (specifically air pollution), which would have affected everyone (particularly the young and very old), contribute much to the divide in mortality between Eastern Europe and the West.[9]

Comparisons of traditional coronary risk factors and lifestyle variables (i.e., plasma cholesterol and blood pressure levels, obesity, tobacco use) between Eastern and Western Europe have not offered convincing explanations either.[10] For example, differences in traditional risk factors (including smoking) were minimal and often inconsistent in a comparative study of 50-year-old Swedish and Lithuanian men, the latter of whom were 4 times more likely to die from CHD than their Swedish counterparts. However, differences in psychosocial coronary risk factors[11] were striking: Lithuanian men reported more signs of psychosocial stress and social isolation, less effective coping and self-esteem, and more vital exhaustion and depression than Swedish men.[10]

THE GENDER GAP IN HEART DISEASE

A similar pattern of findings emerges when the gender gap in heart disease is considered. Although men generally develop the disease earlier than women, differences in male-to-female mortality ratios between countries are larger than those between the sexes within a country, suggesting that "male anatomy is not destiny," at least in regard to heart disease.[12] Gender differences in traditional risk factors, such as smoking, obesity, hypertension, high plasma total, and low high-density lipoprotein cholesterol (typically less favorable among men) explain only 40% of the variation in the gender ratios of CHD mortality in 24 countries (including Russia, Lithuania, and Poland).[12] Unfortunately, similar analyses using psychosocial coronary risk factors are unavailable.

It is conceivable that the variables distinguishing Lithuanian from Swedish men may also explain some of the variance in gender ratios in CHD. For example, men report less available social support from fewer sources than women. At first glance, gender differences in distress and depression appear to favor men. In most studies, women report more depression than men (however, this is not consistently found in populations where women and men have similar roles, such as in university settings).[13] Although men tend to report less depression, they may be coping with depression less effectively than women. Men are more likely to use avoidant coping strategies, such as denial, distraction, and excessive alcohol consumption, whereas women are more likely to employ vigilant strategies, accepting depression as a disorder to be treated.[14,15]

Similarly, research on how people cope with disasters (e.g., hurricanes and tornadoes) supports the notion of men's maladaptive coping. Increases in alcohol consumption and depression were related to personal disaster exposure among men, whereas no such direct relationship was evident among women.[16] Thus, when faced with stress, men seem to engage more in behaviors consistent with the stereotypical concept of masculinity.[17] These behaviors, in turn, may contribute to their greater susceptibility to CHD. By contrast, women's coping with severe stress (e.g., asking for help), which reflects a more traditional feminine style, may be cardioprotective.

These same coping styles are likely to play a role in the gender gap in health decline in Eastern Europe, where men are faced with the disruption of traditional male roles (e.g., breadwinner and provider), having to cope with sudden and unexpected economic uncertainty (e.g., job loss), and the breakup of social relations, as well as the stigma associated with the need to ask for help or turn to one's social network for support.

Consequently, interventions solely aimed at reducing traditional coronary risk factors are unlikely to have a dramatic impact on the cardiovascular disease epidemic in Eastern Europe. Rather, behavioral interventions designed to increase social support, decrease depression, and improve lifestyle behaviors and coping skills appear to be more promising venues for prevention. Considering that these psychosocial factors are differentially linked to notions of masculinity and femininity, the design of gender-specific interventions may be required to yield effective outcomes.

PUBLIC HEALTH CHALLENGE

The increase in mortality observed in Eastern Europe came about as a result of enormous social and economic change occurring over the past 15 years and individual responses to the turmoil. The speed with which mortality rates changed, especially for middle-aged men, clearly point away from a biological or genetic explanation for the changes that occurred. Rather, an explanation may be found by looking at the social context of people's lives during a period of great social unrest and examining their responses to it. Thus, solutions need to be sought in the behavioral and social arena. The coping strategies frequently employed by women, such as relying on a network of social support and seeking treatment for depression, seem to have a health-protective effect.

The challenge for public health officials is how to translate these results into interventions that can be used across large populations experiencing dramatic social change. Both individual- and societal-level approaches to prevention should be implemented. Because adult men have been identified as a group at high risk for adverse health outcomes, they should be targeted for intervention during all interactions with the health care system. The provision of preventive strategies for stress reduction and alcohol management should be a regular part of health care for those at highest risk. At a societal level, policymakers need to consider the impact of the widespread declines in income resulting from political turmoil[18] and the extent to which these changes result in income inequalities within the society and the resultant effects on health.[19,20] In addition, postcommunist health financing reforms, particularly in Russia, led to a complex decentralized system of health insurance that was applied unevenly in the population.[21–23] Recent efforts to provide health care to the population have focused on the balance of access to care and the funds and administrative structure to support it.[24]

The experiences of Eastern Europe should serve as an important example of how societal-level change can influence the health of a population. In the future, by anticipating the health effects that accompany social and economic change, public health and other government officials can be prepared to intervene to protect the health of the population prior to observing catastrophic health effects similar to those seen in many Eastern European countries. ■

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G. Weidner led the writing of this paper. V. Cain wrote the last section and contributed to the conceptualization of the topic.

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